

**Notice of Allowability**

Application No.

09/833,702

Applicant(s)

SEOK ET AL.

Examiner

Art Unit

Pramila Parthasarathy

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/31/2006.
2. ☒ The allowed claim(s) is/are 1,2,4,5,8,9,12; Renumbered as 1-7.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Interview Summary (PTO-413), Paper No./Mail Date 5/27/2006.
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other \_\_\_\_\_

  
AYAZ SHEIKH

SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's amendments to Claims 1 – 13 with cancelled claims 3, 6, 7, 10, 11 and 13, see pages 2 – 5, filed 03/31/2006 and in view of the telephonic interviews have been fully considered.

### ***Allowable Subject Matter***

2. Claims 1, 2, 4, 5, 8, 9 and 12 are allowed.

The following is an examiner's statement of reasons for allowance: The Admitted prior art Cheng et al. U.S. Patent 6,892,175, disclose encoding a watermark into a speech signal comprising the step of: generating a spread spectrum, embedding the spread spectrum signal in the speech signal.

However, the admitted prior art does not disclose, teach or suggest, "a linear prediction analyzing unit for receiving an original signal and detecting a prediction coefficient predetermined through the linear prediction analysis;

a delay unit for receiving the original signal and delaying it by a predetermined time; a linear prediction analysis filtering unit for filtering the signal delayed in the delay unit by using the prediction coefficient detected in the linear prediction analyzing unit;

a frequency area converting unit for converting the signal outputted from the linear prediction analysis filtering unit into a frequency area signal; a psychological acoustic modeling unit for receiving the original signal and gaining a masking threshold by employing a psychological acoustic model;

a time-varying adaptation filtering unit for performing a control so that the signal outputted from the frequency area converting unit may have a magnitude approximate a magnitude the masking threshold gained in the psychological acoustic modeling unit; a time area converting unit for changing the signal outputted from the time-varying adaptation filtering unit to a time area signal;

an error correction coding unit for receiving copyright information and providing an error correction function; a code generating unit for providing a code to the time area signal outputted from the time area converting unit response to a signal outputted from the error correction coding unit;

and computing unit for adding and deducting the signal having the code provided from the code generating unit to/from the original signal response to a corresponding code, and producing a signal having an imbedding of the watermarks; wherein said psychological acoustic modeling unit receives the original audio signal and obtains the masking threshold as a threshold capable of sensing audio original sound in a frequency area by employing a psychological acoustic model."

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3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Yoon Ham, Registration Number 45,307 on May 24, 2006.

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IN THE CLAIMS:

1. (Amended) An apparatus for imbedding a watermark by using a linear prediction analysis, comprising:

a linear prediction analyzing unit for receiving an original signal and detecting a prediction coefficient predetermined through the linear prediction analysis;

a delay unit for receiving the original signal and delaying it by a predetermined time;

a linear prediction analysis filtering unit for filtering the signal delayed in the delay unit by using the prediction coefficient detected in the linear prediction analyzing unit;

a frequency area converting unit for converting the signal outputted from the linear prediction analysis filtering unit into a frequency area signal;

a psychological acoustic modeling unit for receiving the original signal and gaining a masking threshold by employing a psychological acoustic model;

a time-varying adaptation filtering unit for performing a control so that the signal outputted from the frequency area converting unit may have a magnitude approximate a magnitude the masking threshold gained in the psychological acoustic modeling unit;

a time area converting unit for changing the signal outputted from the time-varying adaptation filtering unit to a time area signal;

an error correction coding unit for receiving copyright information and providing an error correction function;

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a code generating unit for providing a code to the time area signal outputted from the time area converting unit response to a signal outputted from the error correction coding unit; and

computing unit for adding and deducting the signal having the code provided from the code generating unit to/from the original signal response to a corresponding code, and producing a signal having an imbedding of the watermarks;

wherein said psychological acoustic modeling unit receives the original audio signal and obtains the masking threshold as a threshold capable of sensing audio original sound in a frequency area by employing a psychological acoustic model.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on Tuesday – Thursday 8:00a.m. To 3:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-232-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy  
May 27, 2006.

  
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